

BOROTA, Jan, inz. CSc.

Development of the forestry organization in India. Les cas 16 no.11:
1037-1041 N '64.

1. Institute of Forestry of the Higher School of Agriculture, Prague.

RADUJKOV, Zora; BOROTA, Radoslav; LUCIC, Aleksandar

Seasonal appearance of acute leukemia. Med. pregl. 18 no.1:19-22
'65.

1. Klinicki laboratorijum Klinicke bolnice u Novom Sadu (Nacelnik: Doc. dr. Zora Radujkov).

BOROTKIN, Stanislav

The BAL⁶(CzSSR) circular grinding machine with an automatic cycle. Stan. 1
instr. 54 no. 9:34-35 S '63. (MIRA 16:11)

BOROTNIKOV, V.B.; VASSERMAN, B.I., red.; MARKOVICH, G.L., tekhn. red.

[Problems of construction economics; based on the materials of the construction industry of the Moldavian S.S.R.] Voprosy ekonomiki stroitel'stva; po materialam stroitel'noi industrii MSSR. Kishinev, Izd-vo "Shtiintsa" Moldavskogo filiala Akad. nauk SSSR, 1961. 185 p.
(MIRA 14:11)

(Moldavia—Construction industry)

BOROTVAS, Elemer, okleveles közlekedési üzemmérnök, egyetemi tanársegéd

Consideration of main rules of wagon flow organization in the
automation of marshaling. Köz. tud. sz. 12. no. 10:474-477 0 '62.

HANUKOV, E.D. [Khanukov, Ye. D.], dr., a közgazdasági tudományok
doktora, főiskolai tanár; BOROTVAS, Elemer [translator]

New ways of improving railroad freight tariffs in the Soviet
Union. Kozl tud ss 13 no.3:97-105 Mr '63.

1. Moszkvai Vasutmérnöki Főiskola (for Khanukov).

BOROTVAS, Elemer, dr., a muszaki tudományok kandidátusa, egyetemi docens

Method for evaluating the economic efficiency of the mechanization
and automation of railroad shunting processes. Kozl tud sz 14 no.12;
530-537 D '64.

S/844/62/000/000/032/129
D244/D307

AUTHORS: Miller, N. B., Veselovskiy, V. I. and Borotyntsev, V. A.

TITLE: Investigation of the mechanism of radiation-electrochemical processes in aqueous solutions of uranium salts

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimii. Ed. by. L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 193-198

TEXT: Solutions of hexavalent U and mixtures of U^{VI} and U^{IV} were investigated to elucidate the mechanism of radiation-electrochemical conversions, using Pt, Au and Hg electrodes. The method used was that described previously (Collection: Deystviye ioniziruyushchikh izlucheniya na neorganicheskiye i organicheskiye sistemy, Izd-vo AN SSSR, 1958, p. 93 (The action of ionizing radiation on organic and inorganic systems.)). On irradiation the Pt electrode potential in a solution containing U^{IV} assumes a value about 20 mv lower than zero (w.r.t. the hydrogen electrode). The effect is accompanied by

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vigorous evolution of H_2 resulting from the presence of U^{IV} , which acts as an OH acceptor and prevents the recombination of H and OH. In the presence of U^{VI} and U^{IV} there is some formation of U^V by the reduction of U^{VI} and oxidation of U^{IV} . The yield of U^V in solutions containing only U^{VI} was about 4 ions/100 ev, and in those containing both U^{VI} and U^{IV} it was 8 ions/100 ev. Stationary concentrations of U^V in the solutions were found to be in the ratio of $\frac{1}{\sqrt{2}}$. Study of depolarization currents at a Pt electrode potential of 0.4 v, the electrode being immersed in the uranyl solutions irradiated with 4×10^{16} ev/ml.sec, showed that for a given dosage the lower concentration limit, corresponding to approximately complete capture of H by the uranyl ions, is 5×10^{-2} M. Study of the formation of U^{VI} and U^V on the oxidation of U^{IV} solutions showed that for increasing

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concentration of U^{IV} the stationary concentration of U^V becomes greater. Radiation yields $G(U^V)$ were found to be 2.1, 1.5, 1.06 per 100 ev of absorbed radiation for 0.1, 0.2 and 0.4 M solutions of U^{IV} respectively. The stationary concentrations of U^V were 1.2×10^{-4} , 2.2×10^{-4} and 3×10^{-4} M for the same solutions. There are 5 figures.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-Chemical Institute L. Ya. Karpov)

Card 3/3

BOROV, Ivan B., d-r, st. n. sutr.

Antimetabolites. Priroda Bulg 12 no. 5: 5-9 9-0 '63.

1. Bulgarska akademija na naukite.

BOROV, Iv., dr. , Neshchaten sutrudnik

Biodosimetry in heliotherapy; preliminary communication. Izv. med.
inst., Sofia Vol. 9-10:389-404 1954.
(SUNLIGHT, dosage,
in heliother.)

BOROV, Iv. B., D-r

Using our health resorts in winter. Priroda Bulg 10 no.6:45-50
'61.

1. St. n. sutrudnik pri BAN.

BOROV, Iv. B., d-r, st. n. sutr

Man at high altitudes. Priroda Bulg 11 no.5:33-38 S-0 '62.

1. Bulgarska akademija na naukite.

EXCERPTA MEDICA Sec. 17 Vol. 3/3 Public Health Mar. 57

929. BOROV I. and KIROV K. *A study of general bioclimatology
and the distribution of climatic resorts in Bulgaria
(Bulgarian text) BULL.INST.MED. 1955, 11/12 (757-792)

Mountain stations at altitudes over 2,000 m. are unsuitable as health resorts, but
suitable for winter sports. Stations below 400-500 m. may render useful ser-
vices. A description of the various stations in Bulgaria and the best season to
visit them is given as well as therapeutic indication for their utilization.

Bais - The Hague

Institut za klinichna i obshchestvena meditsina (dir.: akad. Tsvetan
Kristanov) pri BAN

BOROV, Ivan, d-r.

Боргов IV. EXCERPTA MEDICA Sec 19 Vol 2/6 Rehabilitation June 59

1371. The selection of the appropriate hour for heliotherapy (Bulgarian text)
BOROV IV. and NIKOLAEV IG. *Izv. med. Inst. (Sofija)* 1957, 14 (507-516)

On the basis of microclimatic studies carried out on the Bulgarian coast of the Black Sea (seaside resorts of Varna and Nesebar), the most appropriate hours for heliotherapy are indicated. The fact that one of these resorts is situated to the north of Cape Emona, and the other to the south, makes it possible, with some reserves, to draw valuable conclusions for all Bulgarian seaside resorts on the coast of the Black Sea. The custom of bathers in Bulgaria of taking sun-baths late in the morning (after 9 o'clock), is contrary to the existing objective conditions and frequently leads to erythemas, states of hyperthermia, etc. Sun-baths taken in enclosures reserved for men and women, respectively, may be started from 7 o'clock in the morning. For open-air sun-bathing, the weather is already suitable 30 to 60 min. later, according to local conditions. The temperature gradient of the water between 10 o'clock and noon is only 0.8° C., which means that bathing in the sea can start at 10 a.m.

(XIX, 14)

BOROV, I., doktor

Mineral springs of Bulgaria. Priroda 54 no.12:84-88 D '65.
(MIRA 18:12)

1. Bolgarskaya Akademiya nauk, Sofiya.

BOROV, Iv. B.
SURNAME (in caps); Given Names

Country: Bulgaria

Academic Degrees: MD

Affiliation: Senior Scientific Collaborator at the Bulgarian Academy
of Sciences (BAN)

Source: Sofia, Priroda, No 1 Jan/Feb 61, pp 82-84

Data: "Transplantation, Artificial Immunologic Tolerance, and
The 1960 Nobel Prize in Medicine."

BOROV, Ivan, 'd-r

Man under water, and the conquest of the world ocean. Priroda
Bulg 13 no.3.33-38 Npods 162.

BLAZEK, F.; BOROVA, E.; HOLUB, J.; SIMKOVA, M.

Somatotypes in childhood. Cesk. pediat. 15 no.5:436-441 My '60.

1. IV. detska klinika fakulty vseobecneho lekarstvi Karlovy
university, prednosta prof. MUDr. Fr. Blazek.
(SOMATOTYPES)

BOROVA, E.

The Days of New Techniques in the national enterprise
Autobrzdy in Jablonec nad Nisou. Automatizace 5
no.6:171. Je '62.

NEUWIRT, Jan; POKORNY, Zdenek; BOROVA, Jitka

Contribution to the problem of the mechanism of the effect of radio-
protective substances containing sulfur. Cas. lek. cesk. 101 no.24/25:
773-776 22 Je '62.

1. Ustav pro vseobecnou a pokusnou patologii fakulty vseobecneho
lekarstvi KU v Praze, prednosta prof. dr. J. Hepner.

(RADIATION PROTECTION exper)
(CYSTEINE pharmacol)

NEUWIRTOVA, Radana; BOROVA, Jitka; TOBOLKOVA, Jana; DRDKOVA, Sona

Glutathione in the erythrocyte in acute and chronic uremia.
Vnitřní lek. 11 no.9:842-847 S '65.

1. II. vnitřní klinika, Praha (prednosta prof. Fr. Herles),
Ustav experimentalni pathologie, Praha (prednosta doc. T.
Travnicek) a Ustav organizace zdravotnictvi (prednosta prof.
J. Prosek).

(3)

CZECHOSLOVAKIA

TRAVNICEK, T., NEUWIRT, J., BOROVA, J., BROULIK, P., TABORSKY, J;
Institute of Pathological Physiology, Faculty of General
Medicine, Charles University (Ustav Patologicke Fysiologie Fak.
Vseob. Lek. KU) Prague.

"Changes in Proteins of Blood Plasma During Loss of Blood
in Rats."

Prague, Ceskoslovenska Fysiologie, Vol 15, No 2, Feb 66,
pp 119-120

Abstract: Experiments on 91 male rats indicated that the level
of total globulins decreases proportionately during the loss
of blood and even 90 minutes after its end the normal state is not
fully established. Albumin level does not decrease as rapidly
as that of globulins and after 90 minutes tends to reach normal
levels if the loss of blood did not exceed the survival level.
1 Figure, 4 Western, 1 Czech reference. Submitted at "16 Days
of Physiology" at Kosice, 28 Sep 65.

1/1

CZECHOSLOVAKIA UDC 615.-099(:567.538.161)-092.22:612.35.015.2(:567.
964.4)-084

MADLO, Zdenek; VRBA, Jiri; BOROVA, Jitka; Krajska Station for Hygiene and Epidemiology of the Central Bohemian Kraj (KHES Stredoceskeho Kraje), Prague, Director (Reditelka) Dr M. REJSKOVA; Chair of Hygiene (Katedra Hygieny) Head (Vedouci) Prof Dr P. MACUCH, and Chair of Pathological Physiology) Head (Vedouci) Docent Dr T. TRAVNICEK, Faculty of General Medicine, Charles University (Fakulty Vseobecneho Lekarstvi KU), Prague.

"Effect of Styrene on Glutathione in the Liver of Rats."

Prague, Pracovni Lekarstvi, Vol 18, No 6 - 7, Aug 66, pp 267-268

Abstract [Authors' English summary modified]: The effect of styrene, benzene, and toluene on glutathione in the liver of rats was investigated. Decrease of glutathione was found in experiments in vivo after 120 min following an s.c. injection of 0.2 ml of styrene, or benzene. Toluene was not active. Styrene poisoning does not induce an increase in oxidized glutathione. 1 Table, 11 Western, 1 Japanese reference. (Manuscript received 16 Jul 65).
1/1

BOROVA, F.YE.

"Phase Equilibrium at High Temperatures in Salt-Water Systems,
Containing Chlorides and Sulfates of Potassium and Sodium." Inst
of General and Inorganic Chemistry imeni N. S. Kurnakov.

Dissertations presented for science and engineering degrees
in Moscow during 1951.

SO : Sum. No. 480, 9 May 55

CH

17

Anesthetics from carbamic acid series. II. A. Sekera,
A. Borovanský, and Č. Vrba (Masaryk Univ., Brno,
Czech.). *Chem. Listy* 45, 90 (1951); cf. C.A. 45, 3122f. --
By the reaction of $\text{Me}_2\text{N}(\text{CH}_2)_n\text{OH}$ with alkyl isocyanates in
ether, the following derivs. of $\text{RNHCOOCH}_2\text{CH}_2\text{NMe}_2$ were
prepd. and characterized by the m.p. of the HCl salts:
Me, m. 117-19°; Et, m. 110°; Pr, m. 89-90°; Bu, m.
97-9°; iso-Pr, m. 126°; iso-Am, m. 112-14°; tert-Bu, m.
157°. No anesthetic activity was noted. M. Hudlický

1957

621.335.42(437)
4683 Solving the problem of modern tramway
transport. A. BOROVANSKY AND L. REZABEK.
Elek. vtech. Obzor, 42, No. 12, 665-72 (1953) In Czech.
General notes on the design requirements of modern
tramways and detailed technical description of a tram-
car developed jointly by the Czechoslovak Ministry
of Engineering and the CKD Engineering Works of
Prague, to meet the special requirements of the
Prague tramway system. H. NOREL

BOROVANSKY, A.

"Modern solutions in tramway transport". (General principles and description of a new tramcar of recent design.) By A. Borovansky and L. Rezabek

Elektrotechnický Obzor (Electrical Engineering Review, Czechoslovakia), Vol. 42, No. 12, Dec. 1953, pp. 665-718. (Air, AA, London, IR-594-54, 22 Mar 54, Unclassified)

BOROVANSKY, A. M. J.

Local anesthetics. III. Basic esters of monocarboxylic
barbituric acids. Alci Sedra, Alois Borovansky, and Genk
Vrba (Masarykova Univ., Brno, Czech.) Chem. Listy 47,
591-7 (1953); cf. C.A. 47, 12302a. -- 2-Diethylaminoethyl N-
alkylcarbamates (I) prepd. from alkyl isocyanates or by the
Curtius degradation were inactive as local anesthetics. Some
of them showed a slight sedative and hypnotic action upon
white mice. Dialkyl sulfates and KOCN gave MeNCO, b.
42-5° (42%), and EtNCO, b. 59-61° (38%). BuI (0.25
mole) refluxed 20-50 hrs. with 45 g. AgOCN in 200 ml.
Et₂O gave 30% BuNCO, b. 112-13°; Me(CH₂)₃CH:CH-
(CH₂)₃NCO (II), b. 162-3°, was prepd. in 85% yield by
boiling 2 hrs. 30 g. Me(CH₂)₃CH:CH(CH₂)₃COCl in 100
ml. C₆H₆ with 13 g. NaN₃. The I were prepd. by refluxing
0.25 mole RNCO 8-10 hrs. with 35.2 g. Et₃NCH₂CH₂OH (III)
in 100 ml. Et₂O and distg. the mixt. in vacuo. The bases
with HCl gas in Et₂O gave the HCl salt, crystd. from Et₂O-
Me₂CO. Alkyls, % yields, and b.p.s. of the I, and m.p.s. of
the HCl salts: Me, 62, b. 120°, 117-19°; Et, 77, b. 103°,
110°; Pr (IV), 26, b. 116° (n_D²⁰ 1.4900), 91-2°; Bu, 90,
b. 128°, 97-9°; iso-Pr, 41, b. 110°, 125°; sec-Bu, 20, b.
122°, 112-14°; Me₂C, 25, b. 101°, 157°. CH₂:CHCH₂-
Br and AgOCN gave CH₂:CHCH₂NCO which yielded 28%
CH₂:CHCH₂NHCO₂CH₂CH₂NEt₃, b. 121-3° (HCl salt, m.
126-7°), hydrogenated in EtOH over 20% Pd-C, to a
compd. b.p. 135-40°, the const., with the exception of the
b.p., and the infrared spectrum of which agree with those of
IV. Heating 5 g. III with 5 g. MeCHCH₂CON₂ in Et₂O
gave 19% iso-BuNE[CO₂CH₂CH₂NEt₃, b. 148° (HCl salt, m.
126-8°). Refluxing 8 g. II and 5 g. III 5 hrs. in 30 ml. C₆H₆
gave Me(CH₂)₃CH:CH(CH₂)₃NHCO₂CH₂CH₂NEt₃ (V); HCl
salt, m. 103-10° (23% yield). Hydrogenation of V gave
C₁₀H₂₁NHCO₂CH₂CH₂NEt₃; HCl salt, m. 116-19° (from
petr. ether-CHCl₃). M. Hudlický

BOROVANSKY, Alois, SEKERA, Aleš

~~Glucochloroloses. I. Preparation of α - and β -glucochloralose.~~

Glucochloroloses. I. Preparation of α - and β -glucochloralose.
Cesk.farm. 4 no.6:292-293 J1 '55.

1. Z Ustavu pro chemii farmaceutickou Masarykovy university v
Brne.

(HYPNOTICS AND SEDATIVES, preparation of,
 α - & β -glucochloralose)

KUCA, Libor; BOROVANSKY, Alois; SEKKRA, Ales

Glucochloralose, 3. Determination of β -glucochloralose in the presence of α -glucochloralose by spectrophotometry in the infra-red region. Cesk. farm. 4 no.8:412-414 Oct 55.

1. Z Ustavu pro chemii farmaceutickou Masarykovy university v Brne.

(HYPNOTICS AND SEDATIVES

α - & β -glucochloralose determ. by spectrophotometry in infra-red region)

(SPECTROPHOTOMETRY

determ. of β -glucochloralose in presence of α -glucochloralose in infra-red region)

(INFRA-RED RAYS

spectrophotometric determ. of β -glucochloralose in presence of α -glucochloralose)

1. Jakubec, K. Palat, and C. Vrba (Masarykova Univ., Brno, Czech.). *Chemické listy*, 5, 383-91(1938); cf. *J.A.C.S.* 60, 12635. — α -AcNHCH₂CH₂OH (75.6 g.), treated with 12.6 g. Na in 250 ml. anhyd. EtOH and 95.7 g. BuI, kept 12 hrs. at room temp., refluxed 3 hrs., filtered, the EtOH evapd., the residue dissolved in H₂O, the soln. extd. with dil. alkali and H₂O, dried and then Et₂O evapd. yielded 83% α -BuOC₂H₄NHAc (I), m. 43° (from 80% EtOH). Similarly were prepd. 93% *m*- (II), m. 73.5° (from ligroine), and 90% *p*-isomer (III), m. 111° (from 50% EtOH). I (82.9 g.) heated with 300 ml. 18% HCl 1 hr., cooled, alkalinized with NH₃, the amine layer sep'd, and the aq. soln. extd. with Et₂O yielded 90% α -BuOC₂H₄NH₂ (IV), bp 110-8°; similarly were prepd. 87% *m*- (V), yield, 1, 151-2°, and 85% *p*-isomer (VI), bp 150-7°. IV picrate, obtained from IV and picric acid in 83% yield, m. 165° (from EtOH); V picrate, 107%, m. 147° (from water). α -BuOC₂H₄NCO (VII), 92% from IV and COCl₂ in dry PhMe, (dec. chl.), bp 139°; *m*-isomer (VIII), 80%, bp 163-4°; *p*-isomer (IX), 89%, bp 110-12°. VII (19.1 g.) in 90 ml. dry PhMe was poured in portions into 11.7 g. dried and freshly distd. Et₃NCH₂CH₂OH in 150 ml. boiling dry PhMe, boiled 1 hr., kept 12 hrs. at room temp., 2 ml. H₂O added, the mixt. agitated, the PhMe soln. washed after 24 hrs. with H₂O, the resulting α -BuOC₂H₄NHCOCH₂CH₂NH₂ (X) extd. with liq. HCl and the ext. alkalinized, extd. with Et₂O, the Et₂O soln. dried, the X pptd. with HCl gas in Et₂O as the HCl salt, and the ppt. dried over P₂O₅ and KOH, and rynd. from EtOH-H₂O soln. yielded 89% X.HCl, m. 108°; *m*-isomer (XI), 78%, m. 124° (from acetone); *p*-isomer

(XII), 85%, m. 173° (from Me₂CO-AcOEt). The most interesting pharmacol. effect was shown by XI, which was twice as toxic as cocaine, but 50 times as effective in surface anesthesia as cocaine and 70 times as effective as procaine in infiltration anesthesia. K. Murek

HUNGARY / Organic Chemistry. Organic Synthesis.

G-2

Abs Jour: Ref Zhur-Khimiya, No 1, 1959, 1233.

Author : Lempert, K., Beke, D., Borovansky, A.

Inst : Not given.

Title : Research in the Field of Local Anesthetics. VI.
The Preparation of 4-Amino-3,5-Dichlorothiophenols
and Its Certain 5-Alkyl Derivatives.

Orig Pub: Magyar kem. folyoirat, 1956, 62, No 11-12,
373-377.

Abstract: Starting from 2,6-Cl₂C₆H₃NH₂ (I) or N-acetyl-1 (II),
the 2,6-Cl₂-4-HSC₆H₂NHR (III) were synthesized via
2,6-Cl₂-4-SO₂ClC₆H₂NHR (IV). By the action of
CH₂N₂ or R'I on II, the corresponding 2,6-Cl₂-4-
R'SC₆H₂BH R (V) are prepared. 14.1 grams of II
was heated with 32 milliliters of HSO₃Cl for two

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HUNGARY / Organic Chemistry. Organic Synthesis.

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Abs Jour: Ref Zhur-Khimiya, No 1, 1959, 1233.

Abstract: hours at 125-130°C. and after being cooled, IV was obtained (R = H) (IV-a), in a 60-65% yield, m. p. 130-132°C. (from C₆H₆Cl); 10.42 grams of IV-a was fused with 34 grams of ClCH₂COOH and 4.6 milliliters of ClCH₂COCl and after it has been heated at 110-120°C. for one hour was poured into 400 milliliters of water. Thus IV obtained (R = COCH₂Cl) (IV-b) in a 91-96% yield, m. p. 194-194°C. (from benzene-chloroform); IV (R = COCH₃) (IV-c), yield 86%, does not melt up to 300°C., was prepared upon boiling for 15 minutes of 5.2 grams of IV-a with 20 milliliters of glacial acetic acid and 2.1 milliliters of acetic anhydride. A solution of 2.6 grams of IV-a and 13.4 grams of SnCl₂·2H₂O in 55 milliliters of glacial acetic

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HUNGARY / Organic Chemistry. Organic Synthesis.

G-2

Abs Jour: Ref Zhur-Khimiya, No 1, 1959, 1233.

Abstract: acid (saturated with HCl gas), is agitated for 1.5 hours at 20°C. and for one hour at 65°C. and is filtered. From the filtrate after the addition of 25% HCl, III was obtained after ~ 48 hours (R = H), (III-a), yield 20%, m. p. 74-76°C., III-a was also obtained in a 81% yield by reducing IV-b or IV-c with zinc dust. To 3.25 grams of III in 60 milliliters of ether in the cold was added an ether solution of 2.54 grams of CH_2N_2 , 24 hours after being treated with HCl (acid). V was obtained (R = H, R' = CH_3), (V-a), yield 89%; V-a was also prepared by methylation with methyl iodide, in a 61% yield, m. p. 59-61°C. (from benzene). In the same way other V (R = H) were prepared. Given are R', yield in %, m. p. in °C.: C_2H_2 , 78.2, -; C_3H_7 , 65.1, 41-43; C_4H_9 ,

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HUNGARY / Organic Chemistry. Organic Synthesis.

G-2

Abs Jour: Ref Zhur-Khimiya, No 1, 1959, 1233.

Abstract: 62/4, —. Upon melting 4.3 grams of V (R = H, R' = C₂H₅), with 8.2 grams of ClCH₂COOH and 2.2 milliliters of ClCH₂COCl followed by heating for one hour at 110-120°C., V was prepared (R = COCH₂Cl, R' = C₂H₅), yield 94.1%, m. p. 164-166°C.; the other V were prepared in the same way (R = COCH₂Cl) [given are R' and m. p. in °C. (from alcohol)]: CH₃, 180-180.5; n-C₃H₇, 168-168.5; n-C₄H₉, 148-149. All V (R = H) can serve as starting materials for synthesizing compounds with local anesthetic properties. From 24.3 grams of 3,5-Cl₂-4-NH₂C₆H₃SO₂.NH₂ (VI), 85 grams of ClCH₂COOH and 12 milliliters of ClCH₂COCl one obtains (110-120°C., 2 hours) 29.5 grams of 3,5-Cl₂-4-ClCH₂CONHC₆H₃SO₂-NH₂ (VII), m. p. 226-228°C. (from 30% aqueous al-

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HUNGARY / Organic Chemistry. Organic Synthesis. G-2

Abs Jour: Ref Zhur-Khimiya, No 1, 1959, 1233.

Abstract:cohol). Upon boiling (10 hours) 21 grams of VII, 18 millimeters of $\text{NH}(\text{C}_2\text{H}_5)_2$ and 120 milliliters of absolute C_6H_6 leads to the formation of 3,5- Cl_2 -4- $(\text{C}_2\text{H}_5)_2\text{NCH}_2\text{CONHC}_6\text{H}_2\text{SO}_2\text{NH}_2$ (VIII), yield 20.5 grams, m. p. 158-159°C. (from aqueous alcohol, then benzene). Upon attempting to reduce VIII to thiophenol according to the method [Miescher, Helv. chim. acta, 1939, 22, 601], only VI and I were isolated. The same result is obtained in an attempt to reduce 3,5- Cl_2 -4- CH_3 - $\text{CONHC}_6\text{H}_2\text{SO}_2\text{NH}_2$. For communication V see R. Zh. Khim., 1958, 60926. -- S. Rosenfel'd.

Card 5/5

Condensation products of monosaccharides with halo-
genated aldehydes, especially glucose with chloral. Alai
Borjovanský and Aleš Šekera. Czech. 85,596, Mar. 16,
1954. Adding to a soln. of 30 g. glucose in 170 g. CCl₄CH-
(OH)₂ at 70-80° with stirring 0.1 g. H₂SO₄ and 180 ml. CH-
Cl₃, boiling the homogenous mixt. with continuous removal
of H₂O by azeotropic distn. (21.8 ml.), distg. the solvent,
cooling to 60°, stirring 15 min. at 60°, sepg. the pptd. β-gluc-
ochloralose (5-6 g., m. 230-2°), and adjusting the mother
liquors to pH 6-7 with 0.1N NaOH gave 15-17 g. α-gluc-
ochloralose, m. 182-4°.
L. J. Urbánek

VRBA, C.;KOPAC, F.;BOROVANSKY, A.;SOVA, J.

Certain pharmacological properties of local anesthetics from the diethylaminoacetanilide group. Cesk. fysiол. 9 no.11:98-99 Ja 60.

1. Ustav farmakologie vet. fak. VSZL. Ustav farmaceuticke chemie farmaceut. fak. MU, Brno.

(ANESTHETICS LOCAL pharmacol.)

LUKAS, A.; BOROVANSKY, A.; KOPACOVA, L.

Study of local anesthetics 27. Basic aryloxy- and aralkoxy-
acetyl xylidine. Cesk. farm. 13 no.5:225-228 Je'64.

1. Kafedra farmaceutickej chemie a katedra farmakodynamiky
a toxikologickej farmaceutickej fakulty UK, [University Komen-
skeho], Bratislava.

CZECHOSLOVAKIA

KOPACOVA, L.; BOROVANSKY, A.; BENES, L.; Chair of Pharmacodynamics and Toxicology, and Chair of Pharmaceutical Chemistry, Pharmaceutical Faculty, Comenius University (Katedra Farmakodynamiky a Toxikologie a Katedra Farmaceuticke Chemie Farmaceuticka Fakulta UK), Bratislava.

"Study of Local Anesthetics. XXXII. Relationship Between Local Anesthetic and Spasmolytic Effect in the Series of Substituted Basic Carbanilates."

Prague, Ceskoslovenska Farmacie, Vol 15, No 8, Oct 66, pp 420-422

Abstract /Authors' English summary modified 7: In a series of 15 esters of 2,6-dichlorocarbanil acid with methoxy- to pentoxy- substitution of the aromatic ring in the fourth position and diethylamino-, dimethylamino-, and piperidinoethanol spasmolytic effect was evaluated in vitro using rabbit ileum. All the substances had a spasmolytic activity exceeding that of adiphenine. A distinct connection between the effect and the size of the alkoxysubstituent in the aromatic ring was found. A close relationship between the spasmolytic activity and local anesthetic effect was also found. 2 Figures, 3 Tables, 1 Western, 7 Czech references.

BOROVANSKY, L.

Development of anatomic ideas concerning organism. Os morfologie
10 no.1:12-29 '62.

1. Anatomicky ustav lekarske fakulty Karlovy university, Praha.

BOROVANSKY, LADISLA

"Soustavna anatomie cloveka. Napsali: L. Borovansky et al. [Vyd. 1.]
Praha, Statni zdravotnicke nakl. [Systematic human anatomy. 1st ed. illus.]
Vol. 1. 1955. 469 p.
NjF
Vol. 2. 1955
NjP Not in DLC

p. 469 (Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 6, June 1958

BOROVANSKY, L.; HROMADA, J.

The 60th birthday of Professor Dr. K. Zlabek. Cesk. morf. 10 no.3:
247-250 '62.

(BIOGRAPHIES)

BOROVANSKY, Vladislav; DONNER, Ludvik

Errors in diagnosis and therapy of the changes of the mucous membrane in the oral cavity in certain blood diseases. Cesk. stomat. No.5:211-218 Sept 54.

1. X II. stomatol. kliniky KU v Praze, predn. prof. Dr. Frant. Neuvirt. X II interni kliniky KU v Praze, predn. prof. Dr. Ant. Vancura.

(MUCOUS MEMBRANES

mouth, changes in blood dis., diag. & ther.)

(MOUTH

mucosa, changes in blood dis., diag. & ther.)

(LEUKEMIA, manifestations

mouth mucosa, diag. & ther.)

(ANEMIA, APLASTIC, MANIFESTATIONS

mouth mucosa, diag. & ther.)

BOROVANSKY, Vc. EXCEPATA MEDICA Sec.16 Vol.4/2 Cancer Feb 56

577. BOROVANSKY VL and DONNER L. II, stomatol. Klin. KU; 2. intern. Klin. v. Praze. Omyly v diagnostice a terapii slizničních změn v dutině ústní u některých krevních onemocnění *Diagnostic and therapeutic errors in mucosal changes of the oral cavity in some blood diseases* Csl. Stomatol. 1954, 5 (211-218)

One should be careful with stomatological procedures in blood diseases. In 17 cases of acute leukaemia and 3 of aplastic anaemia extraction or incision provoked violent reactions and a rapid deterioration of the disease process leading to death.

Visser - Amsterdam

BOROVANSKY, V.

"Urazy i schorzenia stawu zuchwowego" (Diseases of the jawes), by V. Borovansky. Reported in New Books (Nowe Ksiazki), No. 15, August 1, 1955

BOROVANSKY, Vladislav

Surgical treatment of the habitual dislocation of the jaw.
Acta chir. orthop. traum. cech. 23 no.3:157-161 June 56.

1. Z II. stomatologicke kliniky university Karlovy, prednosta
prof. MUDr. Fr. Neuwirt.

(JAWS, fract.

habitual, surg. (Cz))

(FRACTURES

jaws, habitual, surg. (Cz))

BOROVANSKY, Vladislav

Resection of the maxilla. Cesk. otolar 8 no.2:89-93 Apr 59.

1. II. stomatologicka klinika KU, prednosta prof. dr. Fr. Neuwirt.
(MAXILLA, surgery,
resection (Cs))

BOROVAYA, A. Ya

TSINZERLING, A.V., kandidat meditsinskikh nauk. (Leningrad) BOROVAYA, A. Ya.
(Leningrad)

Case of fungus pneumonia. Vrach. delo no.3:299 Mr '57 :
(MLRA 10:5)

(PNEUMONIA)

BOROVAIA, F. E.

D. I. Kugnetsov, A. A. Kozhukhovskii and F. E. Borovaia, The solubility and vapor pressure of saturated solutions in the systems $\text{KH}_2\text{PO}_4 - \text{NH}_4\text{H}_2\text{PO}_4 - \text{H}_2\text{O}$ at 25° and $\text{NH}_4\text{NO}_3 - (\text{NH}_4)_2\text{HPO}_4 - \text{H}_2\text{O}$ at 50° . P. 1278.

On the basis of the study of the vapor pressure of saturated solutions and the solubility in the systems $\text{KH}_2\text{PO}_4 - \text{NH}_4\text{H}_2\text{PO}_4 - \text{H}_2\text{O}$ at 25° and in the system $\text{NH}_4\text{NO}_3 - (\text{NH}_4)_2\text{HPO}_4 - \text{H}_2\text{O}$ at 50° , one may draw the conclusion that the partial vapor pressure NH_3 over the water solution $(\text{NH}_4)_2\text{HPO}_4$ is greater than was assumed up to the present time.

June 20, 1948

SO: Journal of Applied Chemistry (USSR) 21, No. 12 (1948)

CA

2

Phase equilibria in ternary water-salt systems at elevated temperatures. M. I. Ravich and P. R. Borovaya (N. S. Kurnakov Inst. of Gen. and Inorg. Chem., Acad. Sci. U.S.S.R.). *Izv. Akad. Nauk S.S.S.R. Khim. Neorg. Khim.*, 1964, No. 10, 1940. (U.S. transl. in *Chem. Abstr.*, 1965, 60:10400.) The systems $\text{KCl-NaCl-H}_2\text{O}$, $\text{KCl-KNO}_3\text{-H}_2\text{O}$, $\text{NaCl-NaNO}_3\text{-H}_2\text{O}$, and $\text{KCl-KBr-H}_2\text{O}$ were studied at 300-400° and up to 300 atm. The crystal point was determined from breaks in the p - x or p - t curves, where p and t are pressure and temp., resp., and x is the H_2O content. The expts. were made in an autoclave. x was varied by releasing small measured quantities of steam from the autoclave and t was varied by lowering the temp. a few degrees at a time. The curves showed the conditions at which a mixt. of salts crystal. in the presence of water vapor and also indicated the pressures above which crystal. is impossible. The use of p - x and p - t diagrams for phase analysis is discussed. The results are presented diagrammatically. M. Hinch

BOROVAYA, F. E.

Crystallization of potassium chloride and sodium chloride fusions in the presence of water vapor. M. I. Ravich and F. E. Borovaya. *Izvest. Sektora Fiz.-Khim. Anal., Akad. Nauk S.S.S.R.* 20, 185-83 (1950).—The purpose of this investigation was to study the soly. and vapor pressure of satd. solns. within the system $KCl-NaCl-H_2O$ at temps. of 300-650° and 300-350 atm. Special autoclaves (described) were built for this purpose. The crystn. point was detd. from the relations of vapor pressure and the H_2O content at a given temp. ($p-x$ curves) and vapor pressure and temp. at a given H_2O content ($p-T$ curves). At the onset of crystn. these curves have a break; the position of this break indicates the temp., vapor pressure, and compn. of the satd. soln. The $p-T$ curves had maxima. It was the highest for satd. solns. of KCl , followed by satd. solns. of $NaCl$, and being the lowest for a eutonic satd. soln. of $KCl + NaCl$. In the system $KCl-NaCl-H_2O$ the max. value of vapor pressure of satd. solns. is not a value intermediate between the vapor pressures of satd. solns. of the individual salts. The soly. polytherm of the system $KCl-NaCl-H_2O$ has crystn. fields of KCl and $NaCl$. At temps. above 500° the crystn. curves of KCl and $NaCl$ have a smooth transition from one into another, indicating the existence of continuous solid solns. The isobars of satd. solns. of this system are of 2 kinds. In the first of these corresponding to pressures below 132 l.g./sq. cm. each of the curves of the isobars starts on the KCl side of the diagram and ends on the $NaCl$ side. Above this pressure each of the curves of the isobars starts and ends on one side of the diagram; thus a passage is left between the 2 curves. The position of this passage corresponds to $KCl + NaCl$ compn. which does not crystallize at the given pressure at any temp.

M. Hosh

BOROVAYA, F. Ye.

Chemical Abst.
Vol. 48 No. 4
Feb. 25, 1954
General and Physical Chemistry

Phase equilibria at high temperatures in the system $\text{NaCl-Na}_2\text{SO}_4\text{-H}_2\text{O}$. M. I. Ravich, F. B. Borovaya, and V. Ya. Ketkovich. *Doklady Akad. Nauk S.S.S.R.* 77, 617-20 (1951).—Vapor pressures of satd. solns. of the salts and their crysln. temps. were detd. by previously-described methods (cf. C.A. 44, 9232c; 45, 4125b). The vapor pressure of satd. solns. of NaCl rises to a max. of 401 kg./sq. cm. at 600°, and then falls to 0 at 800° (m.p. of NaCl). When enough Na_2SO_4 is added to the NaCl, a 2nd max. appears at a lower temp., defining a region where Na_2SO_4 is the solid phase. This 2nd max. rises and the former diminishes with increasing Na_2SO_4 concn. When the eutectic mixt. (70% Na_2SO_4 -30% NaCl) is reached, the Na_2SO_4 curve is almost superimposed on the curve for the vapor pressure of pure water. Approx. values for % Na_2SO_4 , pressure (in kg./sq. cm.), and temp. of the Na_2SO_4 max., and pressure and temp. of the NaCl max. are, resp.: 0, —, —, 401, 600; 20, —, —, 350, 600; 35, 160, 375, 300, 590; 50, 320, 430, 250, 560; 70 (eutectic), —, —, 225, 500 (no data were given for the Na_2SO_4 max. at eutectic concn.). The m.-p. diagram for the ternary system is presented in triangular form, and is based on previously published data (cf. C.A. 26, 1500; 29, 7770; 36, 3087). A ternary eutectic m. 100° contains approx. 6% Na_2SO_4 , 20% NaCl, 75% H_2O .
Arlid J. Miller.

Chem
3

7-28-54

CA

2

Vapor pressure of eutectic quaternary aqueous solutions of the reciprocal systems of potassium and sodium chlorides and sulfates at high temperatures. M. I. Ravich and E. E. Borovaya. *Doklady Akad. Nauk S.S.S.R.* 79, 815-18 (1951); *cf.* C.A. 44, 9232c.—The method of p - x and p - t curves previously described was used. Results indicated that, in the presence of water vapor, the mixt. of chlorides and sulfates of Na and K, for detd. salt ratios, can be retained entirely in the liquid phase at temps. considerably above the crit. temp. of water. The min. water vapor pressure must be relatively small (below 100 atm.).
Gladya S. Macy

RAVICH, M.I.; BOROVAYA, F.Ye.; KETKOVICH, V.Ya.

Solubility and vapor pressure of saturated solutions in the system
 $KCl - K_2SO_4 - H_2O$ at high temperatures. Izv.Sekt.fiz.-khim.anal.
22:225-239 1953. (MLRA 7:5)

1. Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova
Akademii nauk SSSR. (Solution (Chemistry)) (Salts)

BOROVAYA, F. Ye.

RAVICH, M.I.; BOROVAYA, F.Ye.; KETKOVICH, V.Ya.

Solubility and vapor pressure of saturated solutions in the system
 $\text{NaCl} - \text{Na}_2\text{SO}_4 - \text{H}_2\text{O}$ at high temperatures. Izv. Sek. fiz.-khim. anal.
22:240-254 '53. 2 (MLRA 7:5)

1. Institut obshchey i neorganicheskoy khimii im. N.S. Kurnakova
Akademii nauk SSSR. (Solution (Chemistry)) (Salts)

Solubility and vapor pressure of saturated solutions in the quaternary aqueous reciprocal system of potassium, sodium, chloride, and sulfate at high temperatures. M. I. Ravich and P. B. Borovaya. *Izv. Akad. Nauk SSSR, Khim. Nauk*, 1953, No. 1, 253-53 (1953); cf. C.A. 46, 4890a. The system was studied by the method of $p-x$ and $p-T$ curves (cf. C.A. 48, 7968d) at temps. up to 500°. As the temp. rose, the vapor pressure of eutonic solns. first increased to a max. and then decreased. The max., 70-72 kg./sq. cm., was observed at 400-420°. This shows the possibility of keeping K and Na chlorides and sulfates in soln. at temps. greatly exceeding the crit. temp. of H₂O; the required pressure is not very great. $p-x$ diagrams obtained at 400-500° showed the conditions under which salts within the system crystal.

M. Haseh

GOROVAYA, F. Ye.

Phase equilibria in the $\text{NaCl-NaOH-H}_2\text{O}$ system at high temperatures. M. I. ROYTER, F. E. GOROVAYA, E. I. LUK'YANOVA, and V. M. BERNIKOVA (N.S. Kurnakov Inst. Gen. and Inorg. Chem., Moscow). 1952, Zh. Fiz. Khim., Acad. Sci. USSR, *GEKHIM i Neorg. Khim.*, Acad. Nauk S.S.R. 24, 280-88 (1954).—Diagrams are constructed on the basis of exptl. data that show the conditions for the existence of solid NaCl and of liquid solns. formed from all of the possible mixts. of NaCl and NaOH in the presence of H_2O vapor.

J. Roytar Leach

Dist: 1111j

[Handwritten signature]

Borovaya, F. E.

✓ Phase equilibria in the system $\text{Na}_2\text{SO}_4\text{-NaOH-H}_2\text{O}$ at high temperatures. M. I. Ravin and F. E. Borovaya. *Izv. Akad. Nauk S.S.R. Khim. Anal. Inst. Khim. Akad. Nauk S.S.R.* 26, 229-41 (1956).—Investigation of vapor pressure of satd. soln. and soly. at high temp. of the system permitted construction of diagrams that disclose conditions for existence of solid and liquid phases formed from all possible mixts. of Na_2SO_4 and NaOH in the presence of water vapor at temps. 200-600° and pressures of 10-250 kg./sq. cm. V. N. Bednarski

5(2)

AUTHORS: Ravich, M. I., Borovaya, F. Ye.

SOV/78-4-9-29/44

TITLE: Phase Equilibria in the Quaternary System Sodium Sulphate -
chloride - hydroxide - Water at 350 and 400°C

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 9, pp 2100-2115
(USSR)

ABSTRACT: The present paper is a continuation of an investigation of the formation of liquid and solid phases in the presence of high-pressure steam (Refs 1, 2). Figure 1 shows the flask used for the solubility determination, figure 2 the autoclave used for determining the steam pressure. The working process has been described in references 1-5. Figure 3 shows the composition of the saturated solutions in the range of crystallization of NaCl on the basis of p - x curves. On account of the very flat intersections of these curves it was decided that it would be better to determine the phase composition analytically. The compositions of the saturated solutions of the system mentioned in the title and the respective steam pressures are given in tables 1 and 2. Figures 4 and 5 show the results of the direct determination of the steam pressure. It was assumed on account of the sharp bends in the steam pressure curves that a new phase had formed which

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Phase Equilibria in the Quaternary System

SOV/78-4-9-29/44

Sodium Sulphate - -chloride - -hydroxide - Water at 350 and 400°

was called γ -phase and found to be $3\text{Na}_2\text{SO}_4 \cdot 2\text{NaOH}$. Diagrams 9-12 show the borders of the crystallization ranges of Na_2SO_4 and the δ -phase. Within the temperature range investigated phases containing NaOH can crystallize only from highly concentrated solutions with steam pressures not to exceed 36 - 38 kg/cm². Between 350 and 400° the range of crystallizing salts diminishes as the steam pressure is increased, while the range of unsaturated liquid solutions grows. Under such conditions NaOH and NaCl dissolve considerable amounts of Na_2SO_4 so that the conditions of crystallization of Na_2SO_4 are changed essentially in such mixtures and in the presence of water vapor. There are 13 figures, 2 tables, and 20 references, 14 of which are Soviet.

SUBMITTED: May 28, 1958

Card 2/2

SOV/78-4-10-26/40

5(2)

AUTHORS: Borovaya, F. Ye., Ravich, M. I.

TITLE: Phase Equilibria in the Quaternary System Sodiumsulfate -
-chloride - -hydroxide - Water at 450, 500 and 550°

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 10,
pp 2335 - 2346 (USSR)

ABSTRACT: The above system had been already investigated by the authors at 350 and 400° (Ref 1). The extension of the investigation up to 550° yielded at this temperature a distinct gas formation, so that the vapor pressure had to be corrected, accordingly. The composition of the saturated solutions and the vapor pressures are given in table 1. In figures 1-3 the vapor pressures in the coordinates vapor pressure - water content are graphed for the three temperature stages. The solubility- and vapor pressure isotherms, determined by means of the diagrams figures 4-8 are reproduced as projection of the isobars (Figs 9-11) and isohydric lines (Figs 12-14) onto the triangle of the composition of the anhydrous components. At 450° sodium sulfate, sodium chloride and another compound the composition of which most probably corresponds to the formula

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Phase Equilibria in the Quaternary System Sodiumsulfate - SOV/78-4-10-26/40
-chloride- -hydroxide - Water at 450, 500 and 550°

$3\text{Na}_2\text{SO}_4 \cdot 2\text{NaOH}$, crystallize from the aqueous solutions of the system. This latter compound only crystallizes from solutions which are so highly concentrated, that their vapor pressure at 450° amounts only to some atmospheres. At 500 and 550° only sulfate and chloride occur as solid phases. Between 450-550° the range of the crystallized salts decreases with increasing vapor pressure and the range of the unsaturated liquid solution increases. Highly concentrated solutions of 450 and 500° considerable quantities of sodium sulfate. By this the conditions of crystallization of this salt vary as compared with solutions which contain no other water-soluble salts. There are 15 figures, 1 table, and 15 references, 10 of which are Soviet.

SUBMITTED: May 28, 1958

Card 2/2

RAVICH, M.I.; BOROVAYA, F.Ye.

Phase equilibria in the system sodium sulfate - water at high
temperatures and pressures. Zhur.neorg.khim. 9 no.4:952-974
Ap '64. (MIRA 17:4)

1. Institut obshchey i neorganicheskoy khimii imeni Kurnakova
AN SSSR.

L 19642-65 EWT(m)/EWP(p)/EWP(t) JJP(c)/AS(mp)-2/ASD(m)-3/AFWL/SSD/AEDC(a)/
 ACCESSION NR: AP5003161 ASD(p)-3 JB S/0078/64/009/008/1960/1973

AUTHOR: Ravich, M. I.; Borovaya, F. Ye.

TITLE: Phase transformations in the lithium sulfate--water system at high temperatures and pressures 27 27 B

SOURCE: Zhurnal neorganicheskoy khimii, v. 9, no. 8, 1964, 1960-1973

TOPIC TAGS: lithium, sulfate, high temperature effect, high pressure, pressure effect, allotropic transformation

ABSTRACT: The authors carried out determinations of the solubility of lithium sulfate in water at temperatures below critical (248, 298, 343, and 373°C), but at pressures exceeding the vapor pressures of saturated solutions (up to ~1000 kg/cm²), i.e., in the absence of the vapor phase (liquid solutions), and at temperatures exceeding the critical temperature (388 and 398°C) and pressures up to ~1000 kg/cm² (fluid solutions).

Determinations were also made whose results give a partial outline of the upper three-phase and two-phase regions and determine the values of the parameters corresponding to the critical point of the lithium sulfate--water system. These determinations were made at temperatures and pressures up to

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L 19642-65

ACCESSION NR: AP500316

500°C and 2100 kg/cm² in certain cases (S. N. Andreyeva, T. G. Myagkova and V. V. Kazakov participated in the experimental part of the work).

An experimental study of phase equilibria in the lithium sulfate--water system established the following:

1) Within the limits of the parameters studied, at constant temperature, the solubility of Li_2SO_4 in water increases with pressure to the extent that concentrated solutions of this salt can be obtained even above the critical temperature;

2) The temperature coefficient of the solubility of Li_2SO_4 is negative at relatively low pressures, and positive at relatively high pressures. The sign of this coefficient changes at 800-850 kg/cm²;

3) The change of solubility isotherms with temperature of Li_2SO_4 in the liquid and fluid phase indicates the proximity of the upper three-phase and two-phase regions;

4) The upper three-phase region is characterized by a weakly expressed pressure maximum (~ 860 kg/cm²) at 410-420°C;

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ACCESSION NR: AP5003161

5) The critical point of the upper three-phase region, which is apparently the second critical point Q of the $\text{Li}_2\text{SO}_4\text{--H}_2\text{O}$ system is associated with the following parameters: $\sim 395^\circ\text{C}$, $\sim 850 \text{ kg/cm}^2$, at a Li_2SO_4 content of $\sim 30 \text{ wt } \%$;

6) In the upper three-phase region, as temperature increases, the concentration of Li_2SO_4 in the liquid solution rises quickly, reaching $60 \text{ wt } \%$ at 422° ; it decreases in the vapor region down to fractions of a percent.

7) Between 395 and 500°C , the critical solutions of the upper two-phase region are characterized by pressures from ~ 850 to $\sim 2080 \text{ kg/cm}^2$, and a content of about $30 \text{ wt } \%$ Li_2SO_4 ;

8) The phase equilibria in the supercritical regions of the $\text{Li}_2\text{SO}_4\text{--H}_2\text{O}$ and $\text{Na}_2\text{SO}_4\text{--H}_2\text{O}$ system have the same character. Orig. art. has: 12 graphs, 4 tables.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry, Academy of Sciences SSSR)

SUBMITTED: 11Feb64

ENCL: 00

SUB CODE: IC, SS

NO REF SOV: 004

OTHER: 006

JPRS

Card 3/3

RAVICH, M.I.; BOROVAYA, F.Ye.

Solubility of sodium carbonate in water at elevated temperatures
and pressures. Dokl. AN SSSR 156 no. 4:894-896 Je '64.
(MIRA 17:6)

1. Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova
AN SSSR. Predstavleno akademikom I.I.Chernyayevym

RAVICH, M.I.; BOROVAYA, F.Ye.

Solubility of lithium sulfate in water at elevated temperatures and pressures. Dokl. AN SSSR 155 no.6:1375-1378 Ap '64.
(MIRA 17:4)

1. Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova
AN SSSR. Predstavleno akademikom I.I.Chernyayevym.

NIZOVKINA, T.V.; STROYMAN, I.M.; GELLER, N.M.; BOROVAYA, G.M.; SALTYKOVA, I.I.

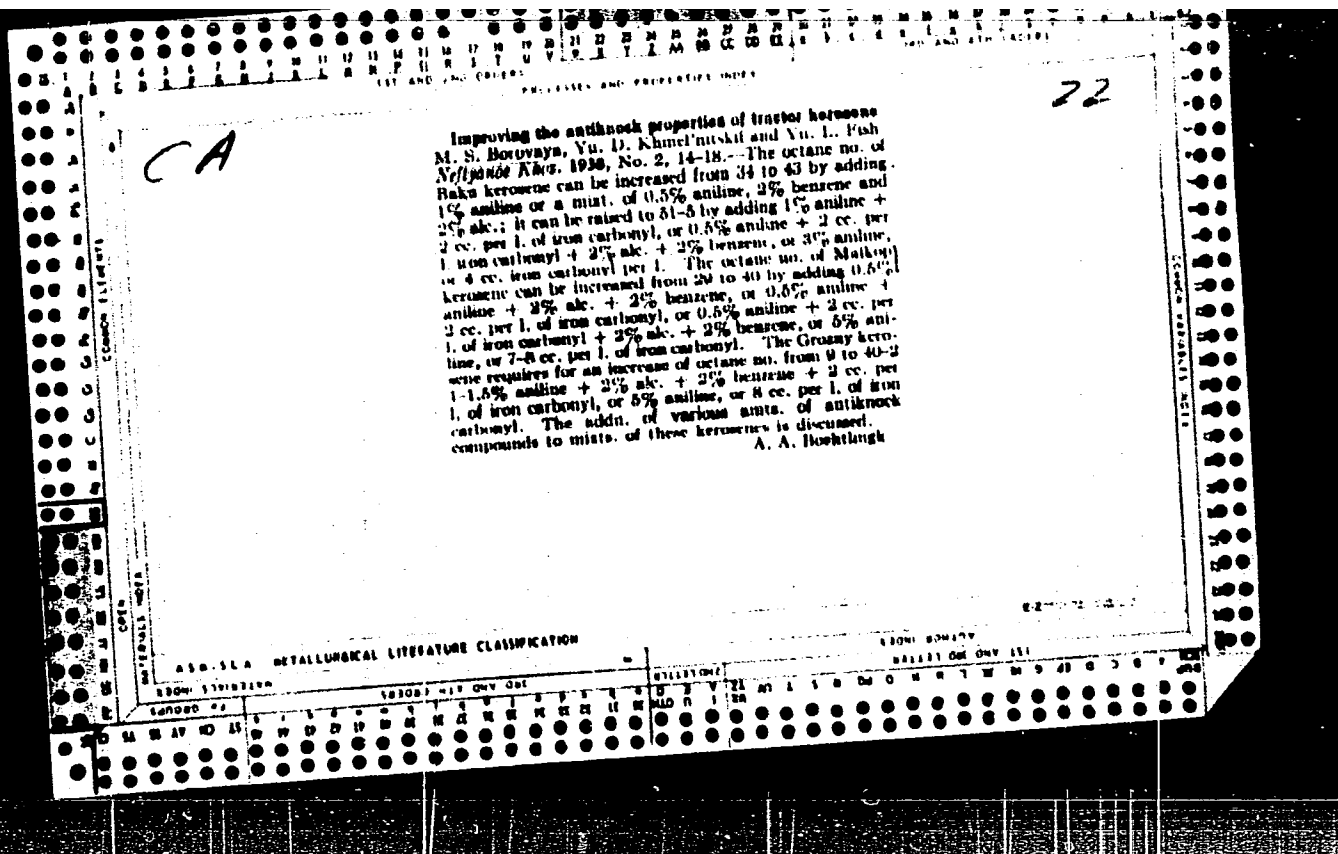
Preparation of phenols by condensation dehydrocyclization.
Zhur. ob. khim. 34 no.11:3566-3570 N '64 (MIRA 18:1)

1. Leningradskiy gosudarstvennyy universitet.

BOROVAYA, L. [Baravaya, L.] (Khotinsk)

In our homeland. Rab.1 sial. 36 no.1:5 Ja '60.
(MIRA 13:5)

(Khotinsk District--Rural conditions)



BOBOVAYA, M. S.

Polarographic determination of metals in lubricating oils.
S. I. Shuyakova, M. S. Bobovaya, and E. A. Gavril'ova.
Zhur. Anal. Khim. 5, 330-3 (1960).—This method was
designed to est. the wear of bearings, in which case Fe, Pb,
and Cu are detd., and (b) for babblit bearings, when Fe,
Pb, and Sn are detd. In a dry-burn the oil at not over 500°
and dissolve the residue in HCl. Ppt. Fe and Pb with
 NH_4OH in the presence of NH_4Cl , filter, and wash the ppt.
with NH_4OH . Dissolve the ppt. on filter with 30 ml. of
hot 2 N HCl and make the vol. 50 ml. Use 10 ml. of soln.
to obtain a polarogram showing the waves of Fe and Pb.
Evap. the combined filtrate and wash waters to a min. vol.,
add 2 ml. of 10% Na_2SO_3 and 0.4 ml. of a 10% soln. of
joiner's glue, and add H_2O to 50 ml. Use 10 ml. of soln.
for polarographic detn. of Cu. Det. the amts. of each of
the metals from calibration curves. For detg. Fe, Pb, and
Sn det. Fe and Pb as above. Ext. the Sn from the oil by
refluxing with HCl. Since some of the Pb is also extd.,
ppt. it with H_2SO_4 , and in the filtrate det. Sn. M. Hosh

BOROVAYA, M. S. and FUCHKOV, N. G.

"Laboratory Research on the Engine Properties of Avtols from Paraffin Base Crudes", p 67, in the Monograph "Investigation and Use of Petroleum Products", edited by N. G. Fuchkov, Gostoptekhizdat, Moscow-Leningrad, 1950.

BOROVAYA, M. S., SEMYAKOVA, S. I. and GAVRIKOVA, K. A.

"The Polarographic Method of Detecting Metals in Lubricants", p 159, in the Monograph "Investigation and Use of Petroleum Products", edited by N. G. Fuchkov, Gostoptekhizdat, Moscow-Leningrad, 1950.

BOROVAYA, M. S. and KREYN, S. E.

"Lubricating Oils for Automobile Engines," pages 154-156 of the monograph,
"Investigation and Use of Petroleum Products," edited by N. G. Puchkov, Gostoptekhlizdat,
Moscow-Leningrad, 1950.

Translation D 399729

Bopovaya H.S.

✓ 2369. EFFECT OF ADDITIVES ON DIESEL LUBRICATING OIL. Puchkov, N.G.
and Borovaya, H.S. (Nefte. Khoz. (Oil Ind., Moscow), 1955, vol. 33, (6),
63-72; ~~abstr.~~ in Chem. Abstr., 1955, vol. 49, 14310). The composition of
oils from Baka crude (high concentration of aromatic hydrocarbons, low
concentration of paraffins), Emba crude (lower proportion of aromatic hydro-
carbons, high concentration of polycyclic naphthenes), and Devonian oils of
high sulphur content are compared, and their lubricating efficiency is
discussed. Addition of complex alkyl phenols to the Devonian oils improved
their performance in laboratory lubricating tests. Some additives,
identified by their Russian trade designations, were found to be especially
effective. Extended field tests confirmed the results of the laboratory
tests. (L). C.A.

①

VINOGRADOV, G.V.; KUSAKOV, M.M.; BEZBORODKO, M.D.; PAVLOVSKAYA, N.T.;
ZELENSKIY, V.D.; KREYN, S.E.; BOHOVAYA, M.S.

Wear-preventive properties of petroleum oils. Khim.i tekhn.tepl.
no.1:61-3 of cover Ja '56. (MLRA 9:7)
(Petroleum)

Cryoscopic determination of aromatic hydrocarbons in crude oil. M. D. Tilicetov, M. S. Borodava, and V. S. Brune (All-Union Sci. Research Inst. for Petroleum Refining and Synthetic Liquid Fuel, Moscow). *Zhur. Anal. Khim.* 11, 189-92 (1956).—This method consists of (1) dissolving 0.4-0.8 ml. of a sample in 13 ml. of cyclohexane and detg. the temp. of crystal. of the mixt. and (2) removal of the aromatic hydrocarbons by treating the mixt. with P_2O_5 and H_2SO_4 , followed by washing with H_2SO_4 , neutralization, drying, and detn. of the l.p. To completely remove the aromatic hydrocarbons the soln. was treated 11 times for 20 min. with a soln. of 30 g. P_2O_5 in 100 ml. 99% H_2SO_4 , washed 4 times for 10 min. with H_2SO_4 , and neutralized by shaking for 10 min. with finely comminuted NaOH. Cl. C.A. 47, 10202. M. Hessel.

TILICHEYEV, M. D., OKISHEVICH, N. A., BOROVAYA, M. S., and GOYSA, YE. I.

"Cryoscopic Methods of Analyzing the Hydrocarbon Content of Petroleum Products."
II. "Cryoscopic Methods of Analysis using Solvents."

Study and Use of Petroleum Products, Moscow, Gostoptekhzdat, 1957, 213 pp.

This collection of articles gives results of AU Sci. Res. Inst. for Processing of
Petroleum and Gas for the Production of Synthetic Liquid Fuel.

AUTHORS: Puchkov, N.G., Borovaya, M.S., Belyanchikov, G.P. and Gavryukhin, N.M. (V.N.I.I. NP)

TITLE: Wearability of an additive in oil during its work in an engine. (Srabatyvayemost' prisadki pri rabote masla v dvigatele).

PERIODICAL: "Khimiya i Tekhnologiya Topлива i Masel" (Chemistry and Technology of Fuels and Lubricants), 1957, No.2, pp.49-56 (U.S.S.R.)

ABSTRACT: The problem of the required level of concentration of additives in oils at which the wear of an engine operating with high sulphur fuel will not exceed the wear obtained with a low sulphur fuel and the limits of the possibilities of additives in suppressing corrosion wear were investigated. As a first step a method of determining the rate of consumption of an additive in oil was required. This was developed on the basis of determining the content of barium chemically bound in an additive and that split off from the additive and combined with products formed on combustion of fuel and oxidation of the oil (barium in octane and benzene soluble and in the residue insoluble in these two solvents). The efficiency of an additive at various levels of sulphur in the fuel was studied using an alkylphenol compound TsIATIM-339. It was shown that the additive is being consumed during operation of an engine (YAZ-204) and that the metallic component of the

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Wearability of an additive in oil during its work in
an engine. (Cont.)

additive is transformed into insoluble compounds which are partially filtered off with the products of the oxidation of the oil. The rate of consumption increases with increasing sulphur content of fuel. 5-10% additions of the above additive decrease the engine wear but the degree of wear obtained with low sulphur fuel cannot be attained. An increase in the concentration of the additive decreases corrosion wear but simultaneously increases the wear by abrasion. Maximum useful concentration of the additive for operation with fuels containing below 1% sulphur should not exceed 3% and for fuels containing up to 1.3% of sulphur - 5%. The wear of engine was measured by the method developed by IMASH A.N. SSSR and weighing of compression rings. Experimental results are given in graph and tables. 7 tables and 5 figures, no references.

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BOROVAYA, Mariya Samoylovna; GOR'KOVA, A.A., vedushchiy red.; POLOSINA,
A.S., tekhn. red.

[Manual for laboratory technicians at petroleum tank farms] Rukovod-
stvo dlia laboranta neftebazy. Izd.2. Moskva, Gos. nauchno-tekhn.
izd-vo neft. i gorno-toplivnoi lit-ry, 1958. 236 p. (MIRA 11:8)
(Chemical laboratories) (Petroleum--Storage)

BOROVAYA, A. S.

SOV/5055

PHASE I BOOK EXPLOITATION

Vesoyurnaya konferentsiya po treniyu i iznosu v mashinakh. 3d, 1959.

Oldrodinatscheskaya teoriya mazki. Onory skol'zheniya. Smazka i smazochnyye materialy (Hydrodynamic Theory of Lubrication, Slip Bearings. Lubrication and Lubricant Materials) Moscow, Izd-vo AN SSSR, 422 p. Price 1 rub. 50 k. Slip inserted. 3,800 copies printed. (Series: Its: Trudy, v. 3)

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Resp. Eds. for the Section "Hydrodynamic Theory of Lubrication and Slip Bearings": Ye. M. Gut'yar, Professor, Doctor of Technical Sciences; and A. K. D'yachkov, Professor, Doctor of Technical Sciences; Resp. Ed. for the Section, "Lubrication and Lubricant Materials": G. V. Vinogradov, Professor, Doctor of Chemical Sciences; Ed. of Publishing House: M. Ya. Klebanov; Tech. Ed.: O. M. Guskova.

Summary: This collection of articles is intended for practicing engineers and research scientists.

COVERAGE: The collection, published by the Institut mashinovedeniya AN SSSR (Institute of Science of Machines, Academy of Sciences USSR) contains papers presented at the III Vesoyurnaya konferentsiya po treniyu i iznosu v mashinakh (Third All-Union Conference on Friction and Wear in Machines) which was held April 15-16, 1959. Problems discussed were in Hydrodynamic Theory (Cont.)

Kuliyev, A. M. Results of the Work of the ANII NP (Azerbaijani Scientific Research Institute of the Petroleum Industry) in the Field of Synthesis, Investigation, and Application of Additives to Lubricating Oils 366

Ruchkov, M. G., M. A. Borovaya and V. D. Reznikov. Change in the Chemical Composition and in the Operating Properties of Oils During Use in an Engine 373

Ramozyn, K. S., and R. Kh. Sil'va. Mechanism of the Corrosive Activity of Oils and the Protective Action of Additives 381

Puka, G. I., M. Ye. Gal'tsova, R. Ya. Kiryushov, A. S. Mikhaylyuk, and I. I. Usa. On the Applicability of Synthetic Esters as Lubricant Materials 386

Puka, G. I., and M. I. Kaverina. Lubricating Capacity and Properties of the Boundary Layers of Oils (Physical Significance and Characteristics of the Lubricating Capacity of Oils) 397

Klimov, K. I., and P. P. Zardovny. Mechanical Destruction of Solids by Molten Metals (Mechanical Destruction of Solids under the title: "Mechanical Destruction of Solidifications of Polyisobutylene in Mineral Oils") (Zhurnal tekhnologiiya topliv i masel", No. 2, 1959) 403

Pavlov, V. P. Elastic-Endurance Properties of Lubricant Materials (Izv. AN SSSR, OTN, "Mekhanika i mashinostroyeniye", No. 2, 1959) 408

Pimenova, Ye. M., and S. G. Arabyan. Development of an Acceleration-Engine Method for Testing Oils for Diesel Tractors ("Traktory i sel'khozmaschiny", No. 9, 1958) 408

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BOROVAYA, M.S.

PHASE I BOOK EXPLOITATION

Akademiya nauk SSSR. Institut nefti

Sostav i svoystva vysokomolekulyarnoy chasti nefti; sbornik rabot po izucheniyu sostava i svoystv neftey i nefteproduktov (Composition and Properties of the High Molecular Weight Fraction of Crudes and Petroleum Products) Collection of Papers on the Composition and Properties of Crudes and Petroleum Products) Moscow, Izd-vo AN SSSR, 1958. 370 p. 3,500 copies printed.

Resp. Ed.: Sergiyenko, S.R., Professor; Ed. of Publishing House: Nekrasov, A.S.;
Tech. Ed.: Pavlovskiy, A.A.; Editorial Board: Topchiyev, A.V., Academician,
Kazanskiy, B.A., Academician, Fedorov, V.S., Candidate of Technical Sciences,
Kusakov, M.M., Professor, Sergiyenko, S.R., Professor, Plate, A.F., Professor,
Nikolayeva, V.G., Candidate of Technical Sciences.

PURPOSE: This collection of articles introduces new material in the field of high molecular weight components of petroleum. It is intended for scientific and engineering personnel.

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Composition and Properties of the High Molecular (Cont.) 647

AGE: This book is the second collection of articles published by the Union Conference on the Composition and Properties of Petroleum Products, January 1956 in Moscow. This volume contains papers on the composition of high molecular weight compounds and sulfur compounds in petroleum by the original authors. The articles add to the knowledge of nature and properties of the least studied fraction, that is the weight fraction of petroleum. Many new experimental data are position and properties of the high molecular weight fractions lubricating oils, paraffins, resins and asphaltenes, sulfur and methods are discussed. Present and future trends in

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PART I. SOME BASIC PROBLEMS OF MODERN PETROLEUM

CHEMISTRY

Sergiyenko, S.R. The State and Prospects for Future Development of Research in the Field of High Molecular Weight Compounds of Petroleum 9

The author gives a review of developments in the field of analysis of the high molecular weight fraction of petroleum in the Soviet Union and abroad. A separate chapter is devoted to the study of Soviet petroleum in respect to its bitumen-asphaltene components. The indications for further research are described. A chart is given to show the process of analysis to which the bitumen-asphaltene fractions of various Soviet crudes were subjected during the last five years. There are 36 references of which 23 are Soviet, 12 English, and 1 German.

Obolentsev, R.D. Problems in the Study of Sulfur Compounds of Petroleum and Petroleum Products 25

This article is a brief review of domestic and foreign research in the field of sulfur compounds of petroleum. Some data are given on

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sulfur compounds found in Soviet crudes. Attention is paid to the recovery of sulfur compounds from high boiling point fractions. There are 7 tables, and 14 references of which 11 are Soviet and 3 English.

Gal'pern, G.D. Physicochemical Properties and Composition of Petroleum Products 36

The author gives a general review of the field of petroleum chemistry. Foreign and Soviet developments are discussed including methods for the determination of the composition and properties of hydrocarbons in multicomponent hydrocarbon liquids. There are 36 references of which 15 are Soviet, 15 English, 2 German, 3 Dutch, and 1 French.

PART II. STUDY OF THE HYDROCARBON COMPONENTS OF OILS

Tilicheyev, M.D., Borovaya, M.S., Buk, V.S., Okinshevich, N.A. Gryoscopic Method for Quantitative Determination of Aromatic Hydrocarbons in Petroleum Oils in Cyclohexane Solution 47

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Composition and Properties of the High Molecular (Cont.) 647

This article describes the improved cryoscopic method of Tilicheyev and mentions its application for the first time to control of the clearness of separation of aromatic hydrocarbons from alkanes and cyclanes in the chromatographic separation of lubricating oils into aromatic and saturated components with silica gel. It was determined that various aromatic fractions separated from petroleum oils by chromatography (under conditions chosen by the author) contained 2 to 22 mol. percent of nonsulfonating admixtures. There are 4 tables and 3 Soviet references.

Zherdeva, L.G., Sidlyaronok, F.G. The Structure and Properties of Aromatic Compounds Contained in the High Boiling Petroleum Fractions 54

This article considers the structure and properties of aromatic compounds from two types of eastern petroleum: Tuymazy petroleum (paraffinic, sulfur containing) and Emba petroleum (low paraffin, low sulfur content). It was determined that high molecular weight aromatic compounds separated from sulfur-containing petroleum consist of a mixture of polycyclic (3 - 7 cycles in an average molecule), mostly condensed aromatic hydrocarbons, and sulfur compounds similar in their properties to aromatic hydrocarbons. The calculation of the structural

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group composition from physicochemical constants without hydrogenation shows considerable disagreement with the composition determined on the basis of hydrogenation, and therefore cannot be used for fractions of polycyclic high molecular weight aromatic compounds. There are 10 tables, 1 figure, and 15 references of which 7 are Soviet, and 8 English.

Maumyan, A.V., Ya, Stepanyan, J.S., Misayev, M.R. Determination of the Hydrocarbon Composition of Oil Fractions

69

In order to explain the relation between quality of oils and hydrocarbon composition the authors studied a number of oils from the Baku region. They came to the conclusion that the adsorption method of analysis is the most objective one and should be recommended for the determination of hydrocarbons in oils. It is sufficient to examine the fraction with viscosity $E_{50} = 7$ (table 15) in order to obtain the characteristics of the entire range of oils of the studied crude. There are 15 tables, and 3 Soviet references.

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Composition and Properties of the High Molecular (Cont.) 647

Krol', B.B., Zherdava, L.G., Ostroumova, Ye.A. Determination of the Chemical Composition of Oils by Means of Adsorptive Separation 81

This paper gives a description of the adsorptive separation method as used in the oil chemistry laboratory of the VNII NP to determine the chemical composition of crudes and oils. It is designed for the determination of group composition of oils, oil distillates, residues and extracts. Application of this method to the analysis of crudes gives an estimate of the yield and quality of oils produced. There are 6 tables, 1 figure, and 15 references of which 8 are Soviet, and 7 English.

Artem'yeva, O.A., Mitrofanov, M.G., Martynenko, A.G. Investigation of the Dynamics of Changes in the Chemical Composition of Crudes and Intermediate Products in the Production of Aviation Oil MS-20 90

This paper is a study of the effect of production processes on the quality of group composition in MS-20. MS-20 is described as the final product obtained from a blend of concentrates from Karachukhur-Surakhan petroleum and Grozny cylinder stock. After refining by selective solvents, deparaaffination, and contact refining with clay

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powder, the MS-20 shows the following group composition (percent by weight): naphthene-paraffin hydrocarbons 70.3; naphthene-aromatic hydrocarbons 27.1; propane soluble tars 0.7; and tarry substances not soluble in propane 1.9. There are 20 tables and 2 English references.

Kaverina, N.I., Losikov, B.V., Fedyantseva, A.A. Adsorption Method for Determining the Fractional Composition of High-Polymeric Lubricating Oil Additives

109

The authors show that chromatographic adsorption can be used as a method for separating polyisobutylene and vinypol, with active carbon or silica gel as adsorbent. The method can be of considerable interest in estimating the quality of high-polymer viscous additives in oils. It can also be used in obtaining polymer fractions with equal molecular weights. There are 5 tables, 1 figure, and 3 references of which 2 are German and 1 English.

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PART III. EFFECT OF COMPOSITION ON THE PERFORMANCE OF LUBRICATING OILS

Kuliyev, A.M., Kuliyev, R.Sh., Aliyev, M.I. Effect of the Hydrocarbon Composition on the Physicochemical Properties and Performance of Lubricating Oils 119

A study was made of the narrow oil fractions and commercial oils obtained from various Baku crudes. It was shown that the physicochemical properties and the performance properties of oils are modified by the hydrocarbons composition and structure. The naphthene-paraffin hydrocarbons obtained from various crudes are similar in quality and have very good temperature-viscosity properties but show low oxidation stability. Aromatic hydrocarbons differ in their properties and have a greater effect on the quality of lubricating oils than naphthene-paraffin hydrocarbons. Aromatics and tars inhibit the action of depressants and additives. The article contains 16 tables there are no references.

Kreyn, S.E., Borovaya, M.S. Effect of the Chemical Composition of Petroleum Lubricating Oils on Their Properties 138

This paper is a study of petroleum oils obtained from various Baku crudes. Components were separated by adsorption. The distillates

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Composition and Properties of the High Molecular (Cont.) 647

were refined by sulfuric acid and solvent processes. The effect of the composition and the hydrocarbon structures on the quality of lubricating oils was determined for several types of oils. The role of quantity and structure of aromatics, naphthene-aromatics, hydrocarbons, resins and sulfur compounds was studied in motor oils as a factor modifying the character of naphthenic-paraffinic hydrocarbons. The type of the crude and the purpose of the lubricating oil determine the refining processes and their extent. There are 23 tables and 9 references of which 5 are Soviet and 4 English.

Vinogradov, G.V., Kreyen, S.E. Chemical Composition and Wear-Resistance Properties of Petroleum Oils

167

Various types of NPF oils (naphthene-paraffin fractions) were studied on friction-test machines in order to establish their wear-resistance properties in relation to their chemical composition. Their wear-resistance properties depend on the amount of aromatic fractions (AF) which are sulfur bearing, in relation to the NPF of variable viscosity and oxidation stability. The chemical composition of oils and individual fractions determines their characteristic behavior in relation to metals. These characteristics vary throughout the entire range of products from distillates through oils to NPF fractions. The article gives 14 figures and 1 table. There are no references.

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Vinogradov, G.V., Semechkin, L.Ya., Pavlovskaya, N.T. Changes in the Composition of Motor Oils During Service 185

In order to study the effect of working conditions on lubricating oils, two oils were chosen: MS-14 (GOST 1013-49) obtained from Emba crudes, and motor oil SU (GOST 1707-51) obtained from Balakhany crudes. These oils were tested on several engines. Characteristics of initial and spent samples are given. The tests on piston engines showed that a period of 60 hours of service does not lead to a change of the chemical group-composition of oils. Longer periods (100 hours) are needed to cause noticeable changes. There are two tables and 4 references of which 3 are Soviet and 1 English.

Zelenskiy, V.D., Vinogradov, G.V. Effect of the Composition on Wear-Resistance Properties of Petroleum Products.

The authors studied the wear-resistance properties of lubricants and the effectiveness of additives as seizing inhibitors. The lubricants were tested on a friction-test machine. In order to establish which light fractions begin to show wear-resistance properties, several pe-

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roleum products were tested (e.g. kerosene fractions). The performance of lube oils was examined at high surface friction and with various additives (sulfur, phosphorus, chlorine). Oils used were: transformer oils, SU, AK-15. A close study of the NPF (naphthene-paraffin fraction) was made, and their characteristics were determined as modifying the properties of the oils. The NPF from various crudes are different and their sensitivity to additives vary (especially towards organophosphoric wear-resistance additives). There are 2 tables, 2 figures, and 2 Soviet references.

Pavlovskaya, N.T., Vinogradov, G.V., Bezborod'ko, M.D. Wear-Resistance Properties and Oxidizability of the Naphthene-Paraffin Fractions of Viscous and Low-Viscosity Petroleum Oils

198

Since friction tests show the importance of oil composition, in particular of the NPF, a through study was made of this fraction. The NPF of transformer oil and of MS-20 were used in these tests. Results show that it is possible to achieve an exact differentiation of the various naphthene-paraffin fractions obtained from petroleum oils with different viscosity indexes. It was shown that the NPF of low-viscosity oils have a lower oxidation stability. There are 5 figures and 3 Soviet references.

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